

Support for relatives bereaved by psychiatric patient suicide: National Confidential

Inquiry into Suicide and Homicide findings

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Objectives: International suicide prevention strategies recommend providing support to families bereaved by suicide. The study objectives were to measure the proportion of cases in which psychiatric professionals contact next of kin after a patient's suicide and to investigate whether specific, potentially stigmatizing patient characteristics influence whether the family is contacted.

Methods: Annual survey data from England and Wales (2003–2012) were used to identify 11,572 suicide cases among psychiatric patients. Multivariate regression analysis was used to describe the association between specific covariates (chosen on the basis of clinical judgment and the published literature) and the probability that psychiatric staff would contact bereaved relatives of the deceased.

Results: Relatives were not contacted after the death in 33% of cases. Contrary to the hypothesis, a violent method of suicide was independently associated with greater likelihood of contact with relatives (adjusted odds ratio=1.67). Four patient factors (forensic history, unemployment, and primary diagnosis of alcohol or drug dependence or misuse) were independently associated with less likelihood of contact with relatives. Patients' race-ethnicity and recent alcohol or drug misuse were not associated with contact with relatives.

Conclusions: Four stigmatizing patient-related factors reduced the likelihood of contacting next of kin after patient suicide, suggesting inequitable access to support after a potentially traumatic bereavement. Given the association of suicide bereavement with suicide attempt, and the possibility of relatives' shared risk factors for suicide, British psychiatric services should provide more support to relatives after patient suicide.

Approximately 6,000 people die by suicide in the United Kingdom annually (1), with each suicide estimated to affect six (2) to sixty (3) friends and relatives. These reports suggest that the annual incidence of persons who are bereaved by suicide in the United Kingdom is 36,000-360,000. International studies comparing health outcomes after various types of bereavement show that people bereaved by suicide have an increased risk of suicide and psychiatric admission (4). In Britain people bereaved by suicide, regardless of whether they are related to the deceased by blood, have an increased risk of suicide attempt and poor occupational functioning (5), and significantly higher stigma, shame, responsibility and guilt scores compared with people bereaved by other causes of sudden death (6). Such stigma is thought to limit help-seeking behavior and offers of support (7-10).

The suicide prevention strategies for England (11), the United States (12) and other high-income countries recommend providing support for people bereaved by suicide. The evidence base for this recommendation is limited (13), but a number of initiatives to support persons bereaved by suicide are in development in the United Kingdom (14) and they will require evaluation. To ensure equitable access to such services, particularly among the most marginalised groups, it is important to understand and address stigmatizing or avoidant attitudes toward people bereaved by suicide.

In Britain there is no clear framework for providing National Health Service (NHS) or social services support to people bereaved by suicide, and the voluntary sector provides the majority of support (15). An exception is made for suicides of patients recently under the care of psychiatric services, constituting approximately 30% of general population suicides (1). In the case of these patients, NHS guidelines recommend that clinical teams offer families and carers “prompt and open information”, “appropriate and effective support”, and involve them in a routine post-suicide review (16). No previous studies have explored the extent to which relatives are offered such support, despite growing evidence describing the vulnerabilities of

persons bereaved by suicide (4, 5). Psychiatric services that involve family members in post-suicide multidisciplinary reviews have shown local reductions in suicide rates, suggesting systemic benefits (17). Failure to offer support after a patient's suicide represents a missed opportunity to modify adverse mental health outcomes.

Our objective was to use data from the National Confidential Inquiry into Suicide and Homicide (NCISH) to describe the proportion of relatives contacted after a psychiatric patient's suicide in England and Wales. We hypothesised that psychiatric teams would not make contact with families and carers after every suicide, even where patients were documented as living with family or friends, and that specific potentially stigmatizing characteristics of the patients would influence the likelihood of contacting relatives. Such characteristics were selected on the basis of research identifying characteristics implicated in inequitable provision of any health services. We also judged that use of a violent suicide method might dissuade staff from contacting relatives because of social distaste or embarrassment, components of the stigma associated with suicide bereavement (7-9).

Methods

Case ascertainment

Annual NCISH survey data were used to identify individuals who had died by suicide between January 1, 2003 and December 31, 2012 in England and Wales. The NCISH methods have been described in detail elsewhere (18, 19). First, information on all deaths in England and Wales that received a coroner's verdict of suicide or an open verdict (because doubt remained over cause) was obtained from the Office for National Statistics (ONS). Open verdicts were included, by United Kingdom convention, because the majority are understood to be suicide cases (20). Second, information on whether the deceased had been in contact with psychiatric services in the 12 months before death was obtained from the NHS trusts in the deceased's district of residence. Third, demographic and clinical data about the patients who had been in

contact with services were obtained by sending a questionnaire to the responsible consultant psychiatrist.

NCISH has research ethics approval from the North West Research Ethical Committee, and approval under Section 60 of the Mental Health and Social Care Act.

Key covariates

Our primary outcome was whether the relatives of patients who died by suicide had been contacted by the psychiatric team after the patient's death. This was measured by fixed-choice responses to the question "Have you (or any other member of your mental health team) had contact with relatives of the patient following his/her death?". Responses that endorsed 'none' were coded as negative, and those that endorsed 'letter', 'face-to-face discussion', and 'telephone discussion' were coded as positive. There was also a choice for "other", which permitted free-text responses. These remarks were coded subjectively by the first and second authors. Contacts made at an inquest or funeral were coded as negative because they were felt to constitute excessive delay and an inappropriate context (21), and to lack the proactivity of a direct contact. The dataset contained no variable recording presence or absence of next-of-kin details, apart from any comments entered in the "other" category. Our secondary outcome was a dichotomous measure of whether any contact made was face-to-face or by letter or telephone call.

We used clinical judgement and the stigma literature to identify potentially stigmatizing sociodemographic and clinical characteristics of psychiatric patients that we predicted would dissuade psychiatric teams from contacting relatives after a suicide. These characteristics included: use of a violent suicide method; living with a partner or a dependent who was also a psychiatric patient (22); unemployment (23); minority racial or ethnic group (24); residency in the United Kingdom for less than five years (25); forensic history (26); childhood abuse history (27); recent alcohol misuse (28); recent drug misuse (28); primary diagnosis of alcohol

dependence or misuse (29); and primary diagnosis of drug dependence or misuse (28). We used the ONS suicide classification to define dying by violent means: hanging/strangulation, jumping (from a height/in front of a moving vehicle), firearms, cutting/stabbing, burning, drowning, electrocution, and asphyxiation/suffocation. Non-violent deaths were classified as deaths by self-poisoning and by carbon monoxide poisoning (30).

Five potential confounders were selected *a priori* on the basis of clinical judgement: age, sex, socio-economic status (using employment as a proxy measure), severe mental illness (schizophrenia or bipolar disorder), and personality disorder. These diagnoses were used to capture the stigma of impaired functioning - as distinct from the stigma of accessing mental health services, however briefly - and to capture negative attitudes among psychiatric professionals towards this patient group (31, 32).

Statistical analysis

Descriptive statistics are presented as absolute numbers and proportions. The Chi-square tests (with a 2-sided p-value threshold of $<.05$) were used to compare outcomes by patient characteristic. We used logistic regression to estimate the strength of the univariate association between each characteristic and outcomes. Models were adjusted for the five confounders identified above, presenting odds ratios (ORs) and their 95% confidence intervals (CIs). Next, we used multivariate logistic regression of all significant stigmatizing characteristics in the univariate analysis to identify statistically significant independent variables. Collinearity of substance misuse variables was insufficiently high to warrant dropping them from the model. Variables for which data were only available for 2011-12 (living with a partner/dependent who was also a psychiatric patient; recent United Kingdom residency; and childhood abuse history) were not entered into this stage of the analysis for reasons of power. Therefore the final multivariate logistic regression analysis investigated associations with eight potentially stigmatizing variables.

We used complete case analysis in relation to missing data, such that if an item of information was not known, the case was removed from the analysis of that item. The denominator in all estimates is therefore the number of valid cases for each item.

All analyses were conducted using Stata 13.0 software (33).

Sensitivity analyses

We conducted four sensitivity analyses to assess robustness of findings. Given the possibility that some patients lacked next-of-kin details, we simulated exclusion of those with a higher likelihood of having no next-of-kin listed: those who were widowed, separated or divorced, or who were not living with family members (n=2,881). We excluded patients with an open verdict. We assessed the effect of missing data for whether contact was made with relatives, by including cases previously excluded on that basis, recoding the missing values as no contact. Finally, we assessed whether likelihood of making contact with relatives was influenced by recent patient contact, by repeating our main analysis by additionally adjusting for a binary variable describing contact within three months of suicide.

Results

Over the study period (January 1, 2003 to December 31, 2012), NCISH received notifications of 47,824 suicides in England and Wales, including 35,091 cases in which the coroner's verdict was suicide, and 12,733 open verdicts or deaths from undetermined cause. Of these, 13,243 (28%) cases were confirmed to be patients who were in contact with NHS psychiatric services in the year prior to death. Completed questionnaires were received for 13,033 cases: a response rate of 98% (Figure 1). Details of whether post-suicide contact had been made with relatives were lacking for 1,461 (11%) cases, which were excluded from this analysis. We included the remaining 11,572 suicide cases in the analyses. Levels of missing data for other variables were minimal, ranging from 0-9%.

The sample was primarily male (66%), and white (92%), and most patients had used a violent suicide methods (72%) (Table 1). Approximately half the sample had lived alone (46%), whereas 52% had co-habited with family (spouse or partner, parents, or children) or friends.

No contact had been made with relatives after 3,790 suicides (33%). Of the 7,782 suicides (67%) following which relatives were contacted, 61% (n=4,755) of contacts were made face-to-face; 28% (n=2,177) by telephone call; and 11% (n=843) by letter. During 2003-2012 the annual proportion of suicide cases for which relatives were contacted ranged from 63-70% and there were no significant temporal changes over time (likelihood ratio χ^2 test for linear trend) (Figure 2).

The results of our univariate logistic regression analyses showed that several potentially stigmatizing characteristics (forensic history, unemployment, recent alcohol misuse, recent drug misuse, primary diagnosis of alcohol dependence or misuse, and primary diagnosis of drug dependence or misuse) were associated with a lesser likelihood that psychiatric staff contacted relatives of a patient after the patient's suicide (Table 2). Violent method of suicide was associated with a significantly greater probability that staff contacted relatives, as was living with a partner or dependent who also was a psychiatric patient.

Results from our multivariate logistic regression analyses showed that, contrary to our hypothesis, a violent method of suicide was independently associated with a greater likelihood of contacting relatives (adjusted OR [AOR]=1.67) (Table 3). Patient characteristics independently associated with not contacting with relatives were: unemployment (AOR=.80), forensic history (AOR=.69), primary diagnosis of alcohol dependence or misuse (AOR=.46), and primary diagnosis of drug dependence or misuse (AOR=.48). No other potentially stigmatizing patient characteristics were significantly associated with probability of staff's making contact with relatives.

Multivariate analysis for our secondary outcome showed that only primary diagnosis of alcohol dependence or misuse was associated with lower odds of being contacted face-to-face versus by letter or telephone (AOR=.62) (Table 3). Again, contrary to our hypothesis, use of a violent method was associated with an increased likelihood of face-to-face contact (AOR=1.28).

Sensitivity analysis

In an analysis excluding patients who were not as likely to have listed next-of-kin, the magnitude of the ORs for our outcomes were only marginally changed. In analyses that included patients with an open verdict, and included patients with missing values for contact (recoded as no contact), our findings were unchanged.

In an analysis adjusted for recent patient contact, recent alcohol misuse was significantly associated with lower odds of contacting relatives (AOR=.85; CI=.75-.96), unlike the findings of our main analysis. [Tables presenting the results of the sensitivity analyses are available as an online supplement to this article.]

Discussion

For a third of cases in our national sample relatives bereaved by patient suicide had not been contacted by the psychiatric team involved, even for the third of those patients who were living with a partner, family, or friends. This pattern occurred despite clear NHS recommendations that providers of psychiatric services should contact relatives after all cases of patient suicide (16). Whereas some of those patients may have chosen not to provide next-of-kin details, this figure raises concerns about inequalities in the support offered to psychiatric patients' relatives after a potentially traumatic bereavement. Unless there were clear circumstances in which contacting household members was inadvisable, such as breaching confidentiality, our findings suggest a need for more proactive outreach after patient suicide. Furthermore, our hypothesis-based analysis demonstrated that these inequalities constituted inequities, given that specific potentially stigmatizing characteristics of the deceased were associated with a reduced

likelihood of contacting relatives, including a forensic history, unemployment, and a primary diagnosis of alcohol dependence or misuse or of drug dependence or misuse. These results suggests that patients' families are being avoided because of generalized stigma, resulting in the neglect of their needs, and raising concerns about the likelihood of neglecting patients' needs (34).

Above and beyond these clinical governance issues, our findings are concerning because such characteristics are likely to be shared with bereaved relatives, and many of these characteristics are regarded themselves as risk factors for suicide (11). These and other familial and environmental risk factors for mental illness and suicidal behavior (35, 36), together with the additional risk conferred by suicide bereavement (4, 5), identifies this group of relatives as being at higher risk of suicidal behavior. Their help-seeking behavior is likely to have been conditioned by the stigma associated with their relative's mental illness (37), and further influenced by the stigma of suicide (6-9). Consequently, such patient characteristics should alert staff to a greater need to support such relatives after suicide rather than as reasons to marginalise them in this way.

Contrary to our prediction that a violent method of suicide would dissuade staff from contacting relatives, a violent mode of suicide increased the probability of contact, primarily in person. This finding suggests that staff responded appropriately to the anticipated distress of a violent suicide, in contrast to the lay public, who tend to withdraw through social distaste or embarrassment (7-10). Because violent suicide is associated with more severe and co-morbid mental illness (38), this finding may also reflect a tendency by staff to contact relatives who were well-known to the service.

The strengths of this study were that it used a national, comprehensive sample of all suicides among patients with recent contact with psychiatric services, benchmarking expected standards of post-suicide support against national guidelines (16). Only one other published study in the United Kingdom has described support offered to those bereaved by suicide, recruiting a

sample of 85 friends and relatives of older adults (39). Our use of routine data reduced the risk that bias might explain the findings, which were robust to sensitivity analyses. We pre-specified predictor variables, reducing the likelihood that chance might account for associations identified. Alternative explanations for the negative associations between patient characteristics and contact with relatives are that these factors might themselves reduce the likelihood of a patient's providing details of next-of-kin. In some cases they could be markers of disrupted family and social networks, influencing professionals' relationships with relatives before the suicide and their anticipation of the family's reaction if contacted.

The study's main limitation lay in using routine data. The dataset lacked a variable describing presence or absence of next-of-kin details, beyond the six cases in which the availability of next-of-kin data was specifically documented. However, our main findings were robust to a sensitivity analysis that excluded cases with a higher likelihood of not having next-of-kin data. We excluded cases (11%) of cases in which it was unknown whether contact with relatives had taken place. In some cases in which the completing psychiatrist endorsed none, they may have omitted mentioning that there were no next-of-kin details or may have been unaware of colleagues' communications. Our analysis used employment status as a proxy for deprivation, but did not capture area-level deprivation or describe geographic variation in outcomes. Understanding the influence of these variables would assist service improvements.

Our secondary outcome captured the mode of contact after patient suicide, but not its therapeutic quality. In some cases contact may have been made to notify relatives of the death, rather than to offer condolences or sources of support. The routine dataset lacked a variable describing whether staff had met relatives before the death, which might influence post-suicide contact, as well as any socio-demographic characteristics of the next-of-kin. It also lacked information on which individuals in the sample had been formally discharged from psychiatric care within twelve months of their deaths, and how soon after the discharge the suicide occurred. In some cases teams may have been unaware of the patient's death. However our

findings were robust to adjustment for recent contact with the patient, suggesting that the timing of the most recent contact did not strongly influence post-suicide support. Moreover, all such cases require post-suicide review involving relatives, even if discharge had been a year before death, and therefore represent missed opportunities to learn lessons, particularly for patients affected by unemployment, criminality, and substance misuse. Improving recording of next-of-kin details, and involving families in case review should open up communication channels, providing a natural context in which to offer information and support.

Educating psychiatric professionals about the vulnerabilities of people bereaved by suicide is important (40) and has the potential to address the inequities uncovered in this study. Directing relatives of patients who die by suicide to support services (15) is recommended (40), but no United Kingdom studies have described the use of NHS and voluntary sector services for this purpose. Qualitative interviews with British general practitioners indicate that although the majority feel a responsibility to contact bereaved patients, particularly after traumatic bereavement (41), many feel unprepared to deal with the specific effects of suicide, welcoming guidance on what approach to take (42). Their uncertainty is compounded by a lack of evidence for effective interventions to reduce the risk of suicide and psychopathology (13). Each suicide affects a network of relatives, former partners, and friends (3) that extends well beyond registered next-of-kin. Even if immediate family are offered professional support, other members of the patient's network may be overlooked. National marketing of bereavement support available by self-referral would help address the needs of the "hidden" bereaved, and reduce the barriers to help-seeking created by the stigma of suicide bereavement (7-9).

Future studies describing national patterns of post-suicide support in primary care and voluntary sector services would complement this analysis, particularly because the majority of suicides in high-income countries involve people who are not in psychiatric care (1, 43). Qualitative work would permit a deeper exploration of the acceptability and quality of support received. Given the limited evidence base, further trials are required of interventions for people

bereaved by suicide (13), particularly proactive outreach, for which there is an expressed need (44). Primary care and psychiatric professionals are in unique positions to offer such outreach and to counter reluctance to seek help. Health services and academic partners must evaluate such work as part of local and national initiatives to prevent suicide.

Conclusions

Our study showed that the relatives of over 30% of psychiatric patients who die by suicide in the United Kingdom did not receive post-suicide support from the patient's psychiatric teams, even if the presence of next-of-kin could be inferred from living situation. We demonstrated clear inequities in the provision of support for families of unemployed patients, those with a forensic history, and those with a primary diagnosis of alcohol or drug dependence or misuse. Such characteristics, themselves risk factors for suicidal behavior, are often shared with bereaved relatives, for whom suicide bereavement additionally confers an increased risk of suicidality. Improved outreach to relatives after a patient's suicide has the potential to improve outcomes in a group regarded as having a high risk for suicide, although this possibility requires careful evaluation.

Author and article information

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Figure 1: Number of cases in which psychiatric teams made contact with relatives after a patient's suicide in England and Wales, 2003-2012

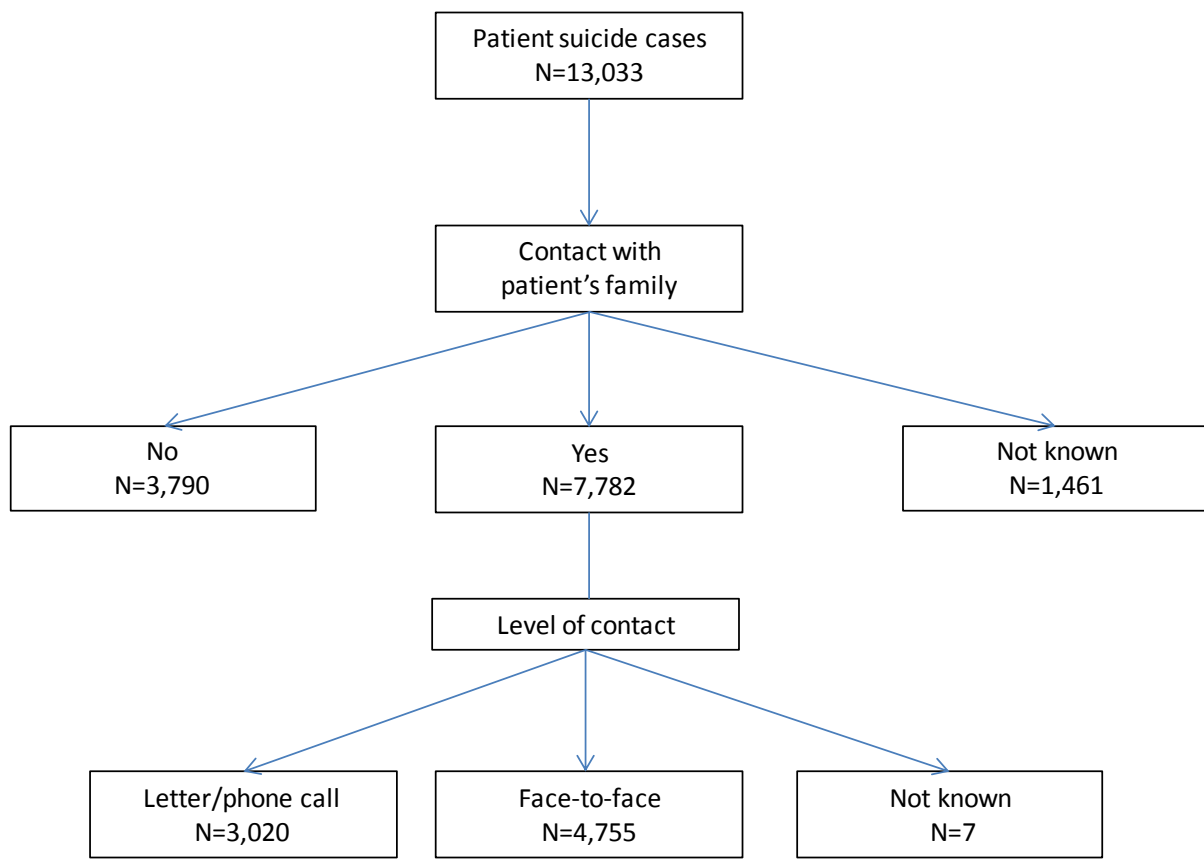


Figure 2: Annual proportion of patients whose relatives were contacted by psychiatric professionals after the patient's suicide, 2003-2012

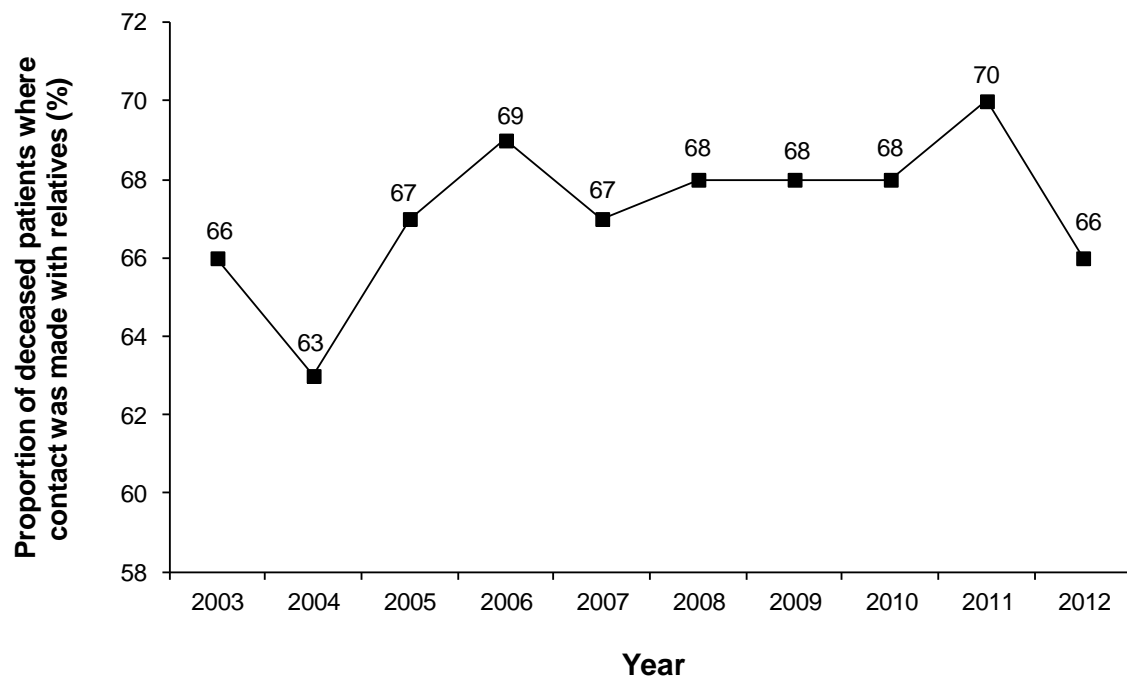


Table 1: Mode of suicide and characteristics of the 11,572 patients who died by suicide, by whether psychiatric staff made contact with their relatives after the suicide and the type of contact

Characteristic	Total			Contact with relatives ^a					Level of contact				
	N=11,572			No contact		Contact			Letter/telephone call		Face-to-face		
	N	Total	%	N	%	N	%	p	N	%	N	%	p
Violent method of suicide ^{b, c}	8344	11,539	72	2463	65	5881	76	<.001	2188	73	3688	78	<.001
Female gender	3934	11,572	34	1140	30	2794	36	<.001	1068	35	1725	36	.41
Age-group													<.001 [‡]

< 25	820	11,572	7	248	7	572	7	.004 [‡]	182	6	390	8	
25-44	4723	11,572	41	1633	43	3090	40		1115	37	1973	41	
45-64	4457	11,572	39	1424	38	3033	39		1228	41	1800	38	
>= 65	1572	11,572	14	485	13	1087	14		495	16	592	12	
Marital status ^d													<.001 [‡]
Single	4173	11,354	37	1338	37	2835	37	<.001 [‡]	988	33	1844	39	
Married/co-habiting	3398	11,354	30	853	24	2545	33		971	32	1574	33	
Divorce/separated	3070	11,354	27	1168	32	1902	25		791	26	1108	23	
Widowed	713	11,354	6	259	7	454	6		243	8	210	4	
Living circumstances ^e													.04 [‡]
Alone	5160	11,221	46	1930	55	3230	43	<.001 [‡]	1289	43	1936	41	

With parents	1325	11,221	12	290	8	1035	14		361	12	673	14	
With spouse or partner (with or without children)	3341	11,221	30	828	24	2513	34		956	32	1557	33	
With children only	486	11,221	4	145	4	341	5		149	5	192	4	
With friends or others	653	11,221	6	225	6	428	6		172	6	255	5	
Prison or young offender institution	74	11,221	1	40	1	34	<1		12	<1	22	<1	
Other institutional setting	170	11,221	2	47	1	123	2		48	2	75	2	
Living with partner or dependent who was also a mental health patient ^{b,f}	81	2,323	3	15	2	66	4	.02	21	3	45	5	.10
Unemployed ^{b,g}	4704	11,191	42	1643	47	3061	40	<.001	1164	39	1893	40	.37

Black or other racial-ethnic minority group ^{b,h}	899	11,388	8	283	8	616	8	.68	196	7	420	9	<.001
Resident of the United Kingdom for <5 years ^{b,f}	130	2,350	6	42	6	88	6	.92	34	5	54	6	.56
Forensic history ^{b,i}	1692	11,161	15	712	19	980	13	<.001	370	12	608	13	.49
History of childhood abuse ^{b,f}	451	2,257	20	142	21	309	20	.67	131	20	178	20	.88
Self-harm in past 3 months ^{b,j}	3134	11,359	28	811	22	2323	30	<.001	872	29	1450	31	.13
Alcohol misuse in past 3 months ^{b,k}	2866	10,566	27	1062	33	1804	25	<.001	739	26	1064	24	.03

Drug misuse in past 3 months ^{b,1}	1716	10,615	16	581	17	1135	16	.02	411	15	723	16	.05
Primary diagnosis ^m													
Schizophrenia or bipolar disorder	3106	11,427	27	596	16	2510	33	<.001	800	27	1707	36	<.001
Depression	4207	11,427	37	1211	33	2996	39	<.001	1251	42	1742	37	<.001
Alcohol dependence or misuse ^b	904	11,427	8	544	15	360	5	<.001	197	7	163	3	<.001
Drug dependence or misuse ^b	459	11,427	4	265	7	194	3	<.001	83	3	111	2	.25
Personality disorder	1041	11,427	9	340	9	701	9	.86	260	9	440	9	.35

^a The no contact group includes 6 cases where it was specifically documented there were no known relatives, and 49 cases reporting contact made only at an inquest or funeral. The contact group includes 7 cases in which the questionnaire indicated in the text field that contact with relatives had been made but the mode of contact was unclear.

^b Potentially stigmatizing sociodemographic and clinical characteristics of psychiatric patients that were expected to dissuade psychiatric teams from contacting relatives after a suicide.

^c Data available for 11,539 cases of patient suicide.

^d Data available for 11,354 cases of patient suicide.

^e Data available for 11,221 cases of patient suicide.

^f Data available for 2011-2012 only (living with partner or dependent who was also a mental health patient, n=2,323; resident of the United Kingdom for < 5 years, n=2,350; and history of childhood abuse, n=2,257).

^g Data available for 11,191 cases of patient suicide.

^h Data available for 11,388 cases of patient suicide.

ⁱ Data available for 11,161 cases of patient suicide.

^j Data available for 11,359 cases of patient suicide.

^k Data available for 10,566 cases of patient suicide.

^l Data available for 10,615 cases of patient suicide.

^m Data available for 11,427 cases of patient suicide.

Table 2: Univariate analysis of associations between characteristics of patients who died by suicide and whether psychiatric staff made contact with their relatives after the death

Characteristic	Any contact <i>versus</i> none					Face-to-face contact <i>versus</i> letter/telephone call				
	OR	95% CI	AOR ^a	95% CI	p	OR	95% CI	AOR ^a	95% CI	p
Violent method of suicide (reference: non-violent)	1.65	1.51-1.79	1.70	1.55-1.86	<.001	1.32	1.18-1.46	1.35	1.21-1.51	<.001
Living with a partner or dependent who was also a mental health patient (reference: no)	1.99	1.13-3.51	2.31	1.25-4.24	.007	1.56	.92-2.64	1.70	.99-2.91	.055
Unemployed (reference: employed)	.75	.69-.82	.70	.64-.77	<.001	1.04	.95-1.15	.91	.82-1.00	.058
Black or other racial- ethnic minority group (reference: white)	1.03	.89-1.19	.91	.78-1.07	.255	1.39	1.17-1.66	1.20	1.00-1.44	.048
Resident in the United Kingdom for <5 years (reference: ≥5 years)	.98	.67-1.43	1.05	.70-1.58	.804	1.14	.73-1.78	1.15	.73-1.79	.546

Forensic history (reference: none)	.62	.56-.69	.62	.55-.70	<.001	1.05	.91-1.21	.95	.83-1.10	.523
History of childhood abuse (reference: none)	.95	.76-1.19	.99	.77-1.26	.911	.98	.76-1.26	.93	.71-1.22	.590
Alcohol misuse in past 3 months (reference: no)	.68	.62-.74	.73	.66-.81	<.001	.89	.80-.99	.85	.76-.96	.006
Drug misuse in past 3 months (reference: no)	.88	.79-.98	.87	.77-.98	.024	1.14	.997-1.30	1.00	.87-1.15	.988
Primary diagnosis of alcohol dependence or misuse (reference: no)	.28	.25-.33	.41	.35-.48	<.001	.51	.41-.63	.59	.47-.73	<.001
Primary diagnosis of drug dependence or misuse (reference: no)	.33	.28-.40	.51	.41-.62	<.001	.84	.63-1.13	.95	.70-1.28	.741

^a Adjusted odds ratios (AORs) were adjusted for age, sex, unemployment, severe mental illness (schizophrenia or bipolar disorder) and personality disorder.

Table 3: Multivariate analysis of associations between characteristics of patients who died by suicide and whether psychiatric staff made contact with their relatives after the death^a

Case characteristic	Any contact <i>versus</i> none			Face-to-face contact <i>versus</i> letter or telephone call		
	AOR ^b	95% CI	p	AOR ^b	95% CI	p
Violent method of suicide (reference: non-violent)	1.67	1.51-1.84	<.001	1.28	1.14-1.44	<.001
Unemployed (reference: employed)	.80	.72-.89	<.001	.92	.83-1.03	.167
Black or other racial-ethnic minority (reference: white)	.87	.73-1.03	.112	1.14	.94-1.39	.168
Forensic history (reference: none)	.69	.61-.80	<.001	.98	.84-1.15	.816
Alcohol misuse in past 3 months (reference: no)	.90	.80-1.02	.10	.94	.82-1.07	.336
Drug misuse in past 3 months (reference: no)	1.16	.99-1.35	.054	1.08	.92-1.28	.338

Primary diagnosis of alcohol dependence or misuse (reference: no)	.46	.38-.56	<.001	.62	.48-.80	<.001
Primary diagnosis of drug dependence or misuse (reference: no)	.48	.37-.61	<.001	.86	.61-1.19	.358

^a The analysis was a multivariate logistic regression of all potentially stigmatizing characteristics for which there were data for each of the years from 2003 to 2012.

^b Adjusted odds ratios (AORs) were adjusted for age, sex, unemployment, severe mental illness (schizophrenia or bipolar disorder) and personality disorder.

Sensitivity analyses (online appendices)

Appendix 1: Multivariate associations between characteristics of patient suicides and whether contact was made with relatives excluding patients divorced, separated or widowed and who were not living with family members

Characteristic	Any contact <i>versus</i> none			Face-to-face contact <i>versus</i> letter/telephone call		
	Adjusted OR [†]	95% CI	p-value	Adjusted OR [†]	95% CI	p-value
Violent method of suicide	1.68	1.49-1.90	<.001	1.28	1.14-1.44	<.001
Unemployed	.75	.66-.84	<.001	.87	.77-.99	.037
Black or other racial-ethnic minority	.87	.73-1.06	.163	1.13	.92-1.40	.236
Forensic history	.66	.56-.78	<.001	1.02	.84-1.24	.820
Alcohol misuse in past 3 months	.91	.79-1.05	.204	.87	.74-1.02	.078
Drug misuse in past 3 months	1.19	.99-1.42	.058	1.06	.88-1.28	.552
Primary diagnosis of alcohol dependence or misuse	.40	.32-.50	<.001	.69	.50-.94	.019
Primary diagnosis of drug dependence or misuse	.46	.35-.61	<.001	.88	.61-1.28	.505

Appendix 2: Multivariate associations between characteristics of patient suicides and whether contact was made with relatives, excluding open verdicts

Characteristic	Any contact <i>versus</i> none			Face-to-face contact <i>versus</i> letter/telephone call		
	Adjusted OR [†]	95% CI	p-value	Adjusted OR [†]	95% CI	p-value
Violent method of suicide	1.68	1.48-1.91	<.001	1.25	1.08-1.44	.003
Unemployed	.80	.71-.90	<.001	.89	.79-1.02	.092
Black or other racial-ethnic minority	.91	.73-1.12	.371	1.07	.85-1.34	.575
Forensic history	.67	.57-.79	<.001	.92	.76-1.11	.365
Alcohol misuse in past 3 months	.91	.79-1.05	.180	.90	.77-1.05	.171
Drug misuse in past 3 months	1.09	.91-1.31	.355	1.07	.88-1.31	.495
Primary diagnosis of alcohol dependence or misuse	.48	.38-.61	<.001	.65	.48-.88	.006
Primary diagnosis of drug dependence or misuse	.47	.34-.64	<.001	.80	.52-1.22	.298

Appendix 3: Multivariate associations between characteristics of patient suicides and whether contact was made with relatives, with missing contact recorded as no contact

Any contact *versus* none

Characteristic	Adjusted OR [†]	95% CI	p-value
Violent method of suicide	1.66	1.51-1.82	<.001
Unemployed	.79	.72-.86	<.001
Black or other racial-ethnic minority	.95	.81-1.11	.495
Forensic history	.70	.62-.80	<.001
Alcohol misuse in past 3 months	.88	.79-.97	.015
Drug misuse in past 3 months	1.12	.98-1.29	.095
Primary diagnosis of alcohol dependence or misuse	.51	.43-.60	<.001
Primary diagnosis of drug dependence or misuse	.51	.41-.64	<.001

Appendix 4: Multivariate associations between characteristics of patient suicides and whether contact was made with relatives, adjusting for recent (<3 months) patient contact

Characteristic	Any contact <i>versus</i> none			Face-to-face contact <i>versus</i> letter/telephone call		
	Adjusted OR [†]	95% CI	p-value	Adjusted OR [†]	95% CI	p-value
Violent method of suicide	1.63	1.47-1.81	<.001	1.28	1.14-1.44	<.001
Unemployed	.80	.72-.89	<.001	.92	.83-1.03	.169
Black or other racial-ethnic minority	.88	.73-1.06	.177	1.14	.94-1.387	.181
Forensic history	.69	.60-.79	<.001	.99	.84-1.16	.88
Alcohol misuse in past 3 months	.85	.75-.96	.010	.93	.82-1.07	.322
Drug misuse in past 3 months	1.04	.89-1.22	.614	1.08	.91-1.27	.372
Primary diagnosis of alcohol dependence or misuse	.56	.46-.68	<.001	.65	.50-.83	.001
Primary diagnosis of drug dependence or misuse	.53	.41-.68	<.001	.88	.63-1.24	.472